

**To:** Eric Johnson[Johnson.Eric@epa.gov]  
**From:** Ioven, Dawn  
**Sent:** Tue 2/4/2014 4:05:19 PM  
**Subject:** READING FILE - FW: WV - formaldehyde presence reported in water tests

**From:** Ioven, Dawn  
**Sent:** Thursday, January 30, 2014 1:35 PM  
**To:** Hodgkiss, Kathy  
**Cc:** Johnson, Eric; Gross, Bonnie  
**Subject:** RE: WV - formaldehyde presence reported in water tests

Hi, Kathy. I reviewed the info provided in your e-mail. Formaldehyde was reported at up to 33 ug/L in samples collected on 13 January 2014 at the Vandalia Grille. There is no Federal MCL for formaldehyde; however, the Office of Water has issued One-Day (10,000 ug/L) and 10-Day (5000 ug/L) Child Health Advisories for this compound; the concentrations observed in the samples cited above are far below the Health Advisories.

Based on the oral Reference Dose (which is a measure of non-cancer toxicity), the risk-based concentration for formaldehyde under a long-term residential exposure scenario (child) is 3080 ug/L (at a Hazard Quotient of 1). Formaldehyde does not appear to be carcinogenic through the ingestion exposure pathway; it is, however, a Group B1 – Probable Human Carcinogen via inhalation. The degree of exposure through volatilization of this compound from tap water is highly dependent upon the external conditions of exposure (such as water temperature and size of exposure area). If you need a ballpark estimate for that, I can run some generic calculations, but the results would be speculative.

Bottom line, the measured levels of formaldehyde cited in the article below would not be expected to pose a threat under conditions of chronic oral or dermal exposure. Further, because of formaldehyde's volatile nature, this compound would quickly move from a dissolved state in water to the gas phase in air, and would rapidly be diluted and broken down by atmospheric processes.

If you have any questions, please let me know. Thanks.

Dawn

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Dawn A. Ioven, toxicologist

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**From:** Hodgkiss, Kathy  
**Sent:** Thursday, January 30, 2014 12:56 PM  
**To:** Ioven, Dawn  
**Cc:** Johnson, Eric; Gross, Bonnie  
**Subject:** FW: WV - formaldehyde presence reported in water tests

Dawn – could you please give us a read on the levels of formaldehyde reported below? Our Ft. Meade Lab has reached out to Dr. Simonton for info regarding sampling, analysis and QA but he has not returned several calls so all the information we have is from newspaper articles. Please let me know if you have questions. Thanks, Kathy

**From:** Miller, Linda  
**Sent:** Wednesday, January 29, 2014 3:30 PM  
**To:** Ferrell, Mark; Burns, Francis; Arguto, William; Wisniewski, Patti-Kay; Hodgkiss, Kathy; Casillas, Laura; Snyder, Raquel; Distefano, Nichole; Capacasa, Jon; Pomponio, John; White, Terri-A; Seneca, Roy; Heron, Donna; Smith, Bonnie; Forren, John  
**Subject:** RE: WV - formaldehyde presence reported in water tests

Third article has important perspective from Secretary Huffman. Mark - thanks so much for keeping us all on the pulse of things there! Linda

**UPDATED: DEP officials unaware of connection between formaldehyde**

## and spill

Marshall professor says 'what we know scares us, and we know there's a lot more we don't know'

by Dave Boucher

Daily Mail Capitol Bureau Chief

Advertiser

**Updated (2:30 p.m.):** The head of the state Department of Environmental Protection questioned a report that formaldehyde found in Charleston tap water is connected to the recent chemical spill.

"We are not aware of formaldehyde being an issue related to the tank spill," DEP Secretary Randy Huffman said Wednesday afternoon.

"Formaldehyde is in a lot of stuff, and so I'm not sure, we're unaware of any relationship...of the formaldehyde to the tanks at Freedom," he said.

"I absolutely don't want to downplay the significance for the potential of formaldehyde in any way."

Earlier Wednesday Dr. Scott Simonton, vice chairman of the West Virginia Environmental Quality Board and a Marshall University professor, told lawmakers he had test results showing formaldehyde in water from a restaurant in downtown Charleston.

At least 10,000 gallons of crude MCHM and PPH spilled from a faulty storage tank owned by Freedom Industries near the Elk River. Officials found the leak Jan. 9, but experts believe it would have taken at least 20 hours for that amount of chemical to leak from the tank.

The results for three different samples taken Jan. 13 at Vandalia Grille show 32 or 33 micrograms per liter of formaldehyde in the water. Simonton said results from many other samples taken from many other places are still being processed.

"It scares me a lot, because it's a known human carcinogen, so any exposure, no matter how slight, is going to increase cancer risks" Simonson said after the legislative meeting.

"Now, that increased risk can be terribly, terribly small. The problem is, we're seeing it in water, we don't know what the concentration is in air."

Huffman questioned the ability for Simonton to connect any formaldehyde at the restaurant to the spill.

"He turned on a spigot, and he measured formaldehyde from a spigot in a restaurant...from a distribution system. It needs to be traced back from there to a potential source," Huffman said.

He explained what he meant later in the interview.

"The way you do that is to start backwards from where you found the material. It may be unique to the restaurant, it may be unique to West Virginia American Water. If it is something that they're getting, that West Virginia American Water is getting in their intake, then certainly we will assist with that," Huffman said.

Once the crude MCHM comes in contact with anything--water, sunlight, skin--it can breakdown, Simonton told

lawmakers. One of those products is methanol, and formaldehyde is a product of methanol, he said.

He acknowledged formaldehyde could come from anywhere, but it's very likely these results are directly related to the spill.

"If we go out to the extreme, it could have been put there by martians," Simonton said.

"But the most likely scenario is a breakdown of MCHM."

State and water company officials have only discussed testing for crude MCHM and PPH. Huffman experts need to have an idea of what to test for in order to test for it.

Any further examination regarding formaldehyde in the water falls under the purview of state health officials, he said.

"If they think there's a raw source of formaldehyde in the river or something, that's obviously something we would get engaged in," Huffman said.

"But the breakdown of the chemical when it gets into the water system and whatever it turns into, that would clearly be something that the health department regulates."

A spokeswoman for the state Department of Health and Human Resources did not immediately respond to a request for comment.

Linda Miller

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**From:** Ferrell, Mark

**Sent:** Wednesday, January 29, 2014 2:35 PM

**To:** Burns, Francis; Arguto, William; Wisniewski, Patti-Kay; Hodgkiss, Kathy; Casillas, Laura; Snyder, Raquel; Distefano, Nichole; Capacasa, Jon; Pomponio, John; Miller, Linda; White, Terri-A; Seneca, Roy; Heron, Donna; Smith, Bonnie; Forren, John

**Subject:** WV - formaldehyde presence reported in water tests

**Time**

<http://nation.time.com/2014/01/29/west-virginia-official-people-are-inhaling-formaldehyde/>

**Gazette**

<http://www.wvgazette.com/News/201401290053>

**Daily Mail**

<http://www.charlestdailymail.com/News/201401290055>

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